

6 - 2 GROUNDWATER SAMPLING

ISSUE: **Are the environmental monitoring procedures for groundwater sampling appropriate?**

RESPONSE:

The licensee is responsible for conducting groundwater sampling, as well as other environmental compliance monitoring, in accordance with license conditions and regulatory requirements, including constituents sampled, type of samples, frequency of sampling, and reporting of sample results. The regulatory agency collects split samples at times it deems appropriate to confirm acceptable sampling and chain of custody procedures of the licensee, as well as the performance of the independent analytical lab. DEQ does not recommend that all sampling be conducted by DEQ; nor is it recommended that split samples be collected and analyzed for all compliance monitoring.

BACKGROUND:

- Envirocare is required by license conditions to perform environmental monitoring of their site. This includes continuous sampling of air particulates, and periodic sampling of vegetation, soil, and groundwater.
- Licenses and permits for commercial waste facilities throughout the United States require the licensee or permittee to collect the samples, have the samples analyzed by a qualified laboratory, and submit the results to the appropriate regulatory agency.
- At the Envirocare facility, the entire site is subject to a state groundwater protection permit that prescribes the regulatory standards. There are additional standards imposed by the NRC for the uranium mill tailings area and the Division of Solid and Hazardous Waste for the mixed waste area.
- The licensee/permittee is required to review the sampling results and is required to notify the regulatory agency if certain conditions exist (e.g., if a parameter, such as lead, has exceeded the regulatory standard). Commercial radioactive waste facilities are monitored for both radiologic (e.g., radium, uranium) and non-radiologic parameters (e.g., heavy metals, volatile and semi-volatile organics).
- The regulatory agency monitors the results in the reports, evaluating whether the results exceed appropriate regulatory standards or whether trends are developing that might result in a problem in the future.
- If the groundwater parameters remain in compliance, the frequency of groundwater monitoring may be reduced. For groundwater wells monitored by the Division of Radiation Control, wells are sampled on a semi-annual basis.
- Groundwater at the Envirocare site is very saline. Use of the groundwater would not be possible without extensive treatment.
- Oversight of the groundwater monitoring program is conducted in two ways: First, the groundwater monitoring program is permitted. This means conditions and standards are set that Envirocare must meet, and any changes to the program must be evaluated. Second, the program is routinely inspected.
- During a semi-annual sampling event, inspectors will accompany the licensee's sampling crew and observe the sampling methods including sample collection and

chain of custody procedures. If a sample collected by Envirocare is to be split, the Division collects the split sample at that time.

- The purpose of split sampling is to verify the data from the laboratory that Envirocare is using, by also sending the split sample to the State Health Laboratory or one of its contract laboratories for analysis.
- There is significant cost for a split sampling event for the State. Obtaining a split from each well being sampled and having the full suite of parameters analyzed for each well by the State Health Laboratory or one of its contract laboratories costs approximately \$80,000 per sampling event. The Division of Radiation Control recently established a policy that 30% of the wells will be split-sampled during a calendar year.